ROBOT MOWER

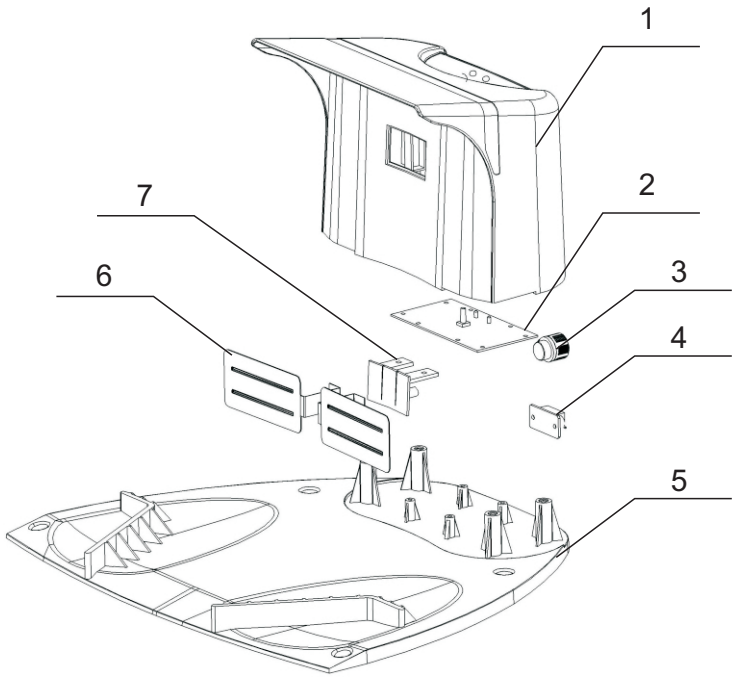
USER MANUAL

Please read this manual carefully before use

Please keep this manual for future reference

CE ROHS

8.1 Charging Station Exploded View



1.top cover
2.PCB
3.Power terminal
4.Virtual wire terminal
5.Underpan
6.Copper sheet
7.Copper sheet permanent seat

The products are manufactured by Taizhou Tianchen Intelligence & Electrics Co., Ltd.
www.tianchen-cn.com

Thank you for purchasing our product. We know that you will enjoy the extra free time you will have while using our robot lawn mower to mow your lawn. You will be impressed with your lawn's appearance and vest of all, 2000series did it for you.

IMPORTANT!

The following pages contain important safety and operating instructions. Please read and follow and instructions in this manual. Carefully read and review all safety instructions, warnings and cautions contained in this manual.
Failure to read and follow these instructions, warnings and cautions statements may result in severe injury or death to persons and pets or damage to personal property.

WARNING
Robot lawn mower can be dangerous if incorrectly used!

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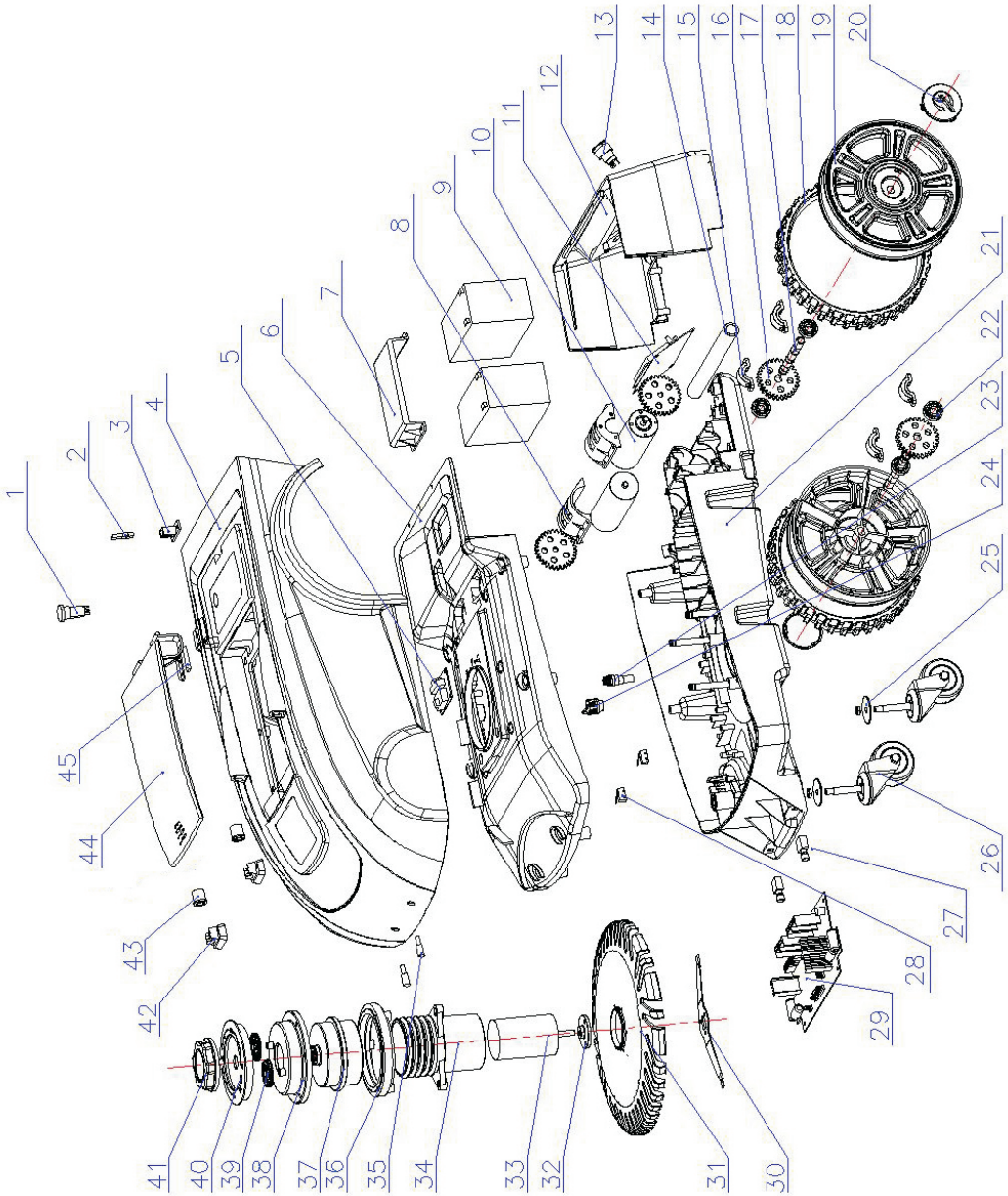
8.2 Mower Exploded View



1. Introduction and safety

1.1Introduction

Product, product specifications and this document are subject to change without notice. All other trademarks are property of their respective owners.

The lawn mower may be used only by those who know how to operate it after reading and understanding the instructions in this manual.
Model: 2000 series (L2700, L2800, L2900 named 2000series)
CE, RoHS approved.

The following pages contain important safety and operating instructions. Please read and follow all instructions in this manual. Carefully read and review all safety instructions, warnings and cautions contained in this manual.

Failure to read and follow these instructions, warnings and cautionary statements may result in severe injury or death to persons and pets or damage to personal property.

IMPORTANT INFORMATION

Read through the Operators Manual carefully and understand the content before using your Robot.

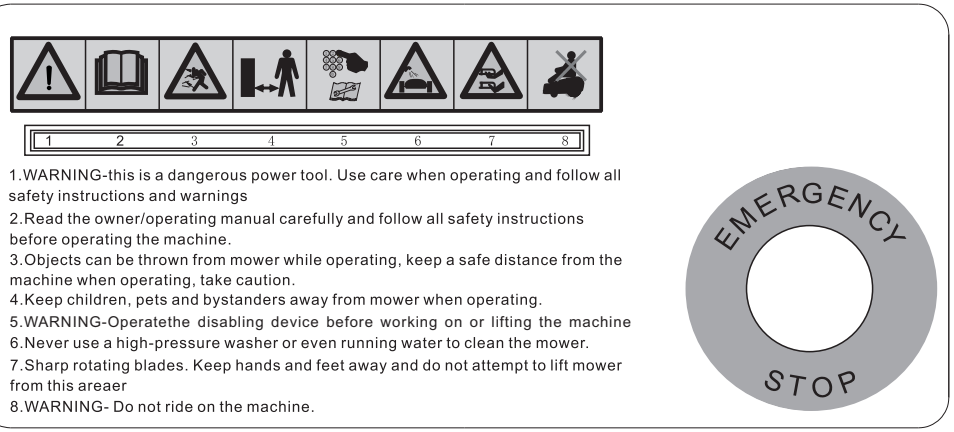
WARNING

Robot lawn mower can be dangerous if incorrectly used.

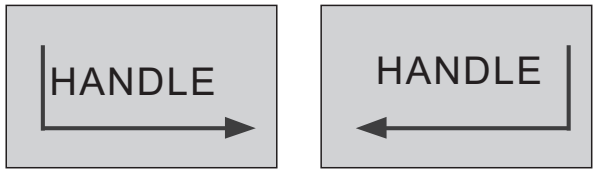
1.2Symbols on 2000series

These symbols can be found in the mower. Study them carefully so you understand their significance.

1. The symbol is pasted on the top of mower, please read it carefully before using the appliance.


1 2 3 4 5 6 7 8
1.WARNING-this is a dangerous power tool. Use care when operating and follow all safety instructions and warnings
2.Read the owner/operating manual carefully and follow all safety instructions before operating the machine.
3.Objects can be thrown from mower while operating, keep a safe distance from the machine when operating, take caution.
4.Keep children, pets and bystanders away from mower when operating.
5.WARNING-Operatethe disabling device before working on or lifting the machine
6.Never use a high-pressure washer or even running water to clean the mower.
7.Sharp rotating blades. Keep hands and feet away and do not attempt to lift mower from this areaer
8.WARNING- Do not ride on the machine.
EMERGENCY
STOP

2. Handle symbol.



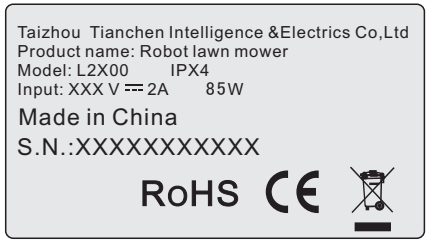
Always lift the mower by Handle.

WARNING
severe injury or death may cause if incorrectly lift the mower.

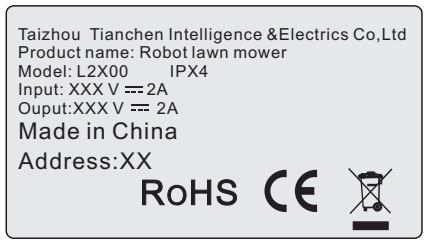
Problem	Display	Possible reasons	Solutions
The robot is very noisy		4.Damaged running motor Grass too high	4. Get the motor repaired or replaced by service station . 5. Increase the cutting height or use a normal lawn mower.

Problem	Display	Possible	Solutions
Mower reached the charging station when its contacts are above the charging station contacts.		Height difference between the charging station and the lawn surface at the entrance to the charging station.	Confirm the ground before the charging station is leveled with the charging station if necessary fill area with dirt and level off.
The robot behaves in an anomalous manner around the flower beds.		Virtual wire incorrectly placed	Relocate the virtual wire
The robot is very noisy		1. Damaged cutting blades 2. Cutting blade flooded by residues(tapes, ropes, plastic fragments, etc) 3.The start of the robot occurred with obstacles being too closed (less than 1m away) or in presence of unexpected obstacles (fallen branches, forgotten objects, etc.)	1. Replace the blade with a new one. 2. Stop the robot in safety conditions; use protection gloves to avoid the risk of cuts on hands; remove the fold cause from the blade. 3. Start the robot in a new place.

3. Specifications symbol



Pasted on mower



Pasted on charging station

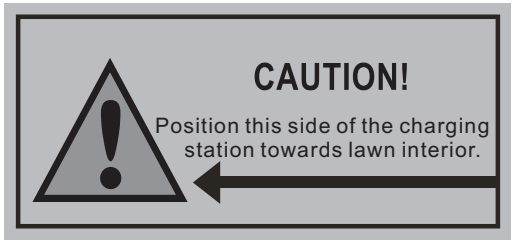
ADDRESS: XX
Enter XX to mower, in order to match the communicate between charging station and robot lawn mower.

S.N.: XXXX XX XX XXX
year month date number

: Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

4. Charging station symbol.

This label is pasted on charging station, please make sure to position this side towards lawn interior. Failure to do may result in damage to property or persons.



5. Warning symbol.

DANGER! Sharp rotating blades. Keep hands and feet away. Serious injury can occur.

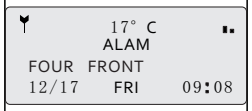
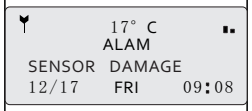
1.3 Symbols in the User Manual

These symbols can be found in this owner/operating manual.

A warning box indicates a risk of personal injury exist,

An information box indicates a risk of material damage exist, especially when the stated instructions are not followed. The box is also used where there is a risk of user error.

Problem	Display	Possible reasons	Solutions
		Terrain needs landscaping repairs.	Fill in all holes, cover or exclude all exposed roots in order to smooth the terrain.
Mower does not complete the edge.		Obstacle along the path	Watch the ful operation of edge and confirm no obstacle are present
Mower drives but blade will not mow.		1. On manual pattern, Mow on remote control has be turned off. 2. The cutting motor is broken.	1.Turn on the mower button. 2. Send the mower to service station and replace a new cutting motor.
Short run time, operates less time than normal		Power is not fully charged for operation	Recharge the mower fully.
Mower does not detect the charging station contacts.		The ground before the charging station is not flat.	Reset the charging station in a flat place.

Problem	Display		Solutions
Mower stop working and beeping.	 	1. Strike bump sensors 8 times continuously. 2.Bump sensors are locked. 3.Wires of bump sensors have be cut off. Bump sensor is broken.	1. Restart the mower 2. Free bump sensors 3. Change new wires of bump sensors. Send the mower to provider and change the bumper sensors.
Remote control does not work		The electricity power is low	Change batteries
The batteries can not recharged		Power nearing natural end of life	1. Send the mower to service station and replace the battery. 2. Check whether the charger is well connected.
		Grass is extremely overgrown or very wet	Cut the grass appropriate height.

1.4 Safety instructions

- Read the owners/operation manual carefully and follow all the safety and warning instructions.
- This machine has sharp rotation blades! Never allow the mower to operate unattended; keep bystanders, children and pets away from mower when in operation.
- Never allow anyone to ride or ait on mower.
- Never allow anyone or person who is not familiar with the safe operation of the mower to operate the mower.
- Keep hands and feet away from the cutting blades and other moving parts.
- Never attempt to service or adjust the mower while it is in operation.
- Inspect and clear the mowing area of all debris (toys, tree branches, items of clothing, debris' height less than 6cm. etc) before operating the mower.
- Never raise the mower or attempt to inspect the blades while the mower is operating.
- Always turn off the power before lifting the mower or attempting any adjustment.
- When operating the mower in manual mode, maintain a safe distance from behind or around the mower and wear proper foot apparel.
- Do not operate the mower on slopes greater than 20 degrees or use it in manual operation on slopes where a firm footing is not possible.
- Do not operate the mower if any safety feature or device is damaged or inoperable.
- Do not attempt to disable or defeat any safety feature or device.

1.INTRODUCTION AND SAFETY

- Use heavy gloves when inspecting or servicing the blades.

- Wear eye protection and use gloves when installing the virtual wire and driving the wire stakes/pegs. Firmly drive all pegs in order to keep the wire from becoming a tripping hazard.

- Do not use the charging station power supply with an extension cord.

- Use only the original equipment power pack and power supply/charger with this mower.

- Do not use the power supply/charger if the cord has become damaged.

- Do not place metal objects in the area of the charging contacts on the charging station.

- Do not place metal objects across the charging pins of the mower.

- Do no spray water directly into the docking area of the charging station or onto the operating panel of the charging station.

- The mower has sharp rotating blades! Please care the mower when it is mowing, in case of serious injury occur.

- Keep the lawn mower in perfect operating conditions by performing the maintenance procedures outlined by the manufacturer. Good maintenance
guarantees better performance and longer service life.

- In order not to irreversibly damage electric and electronic parts, do not wash the robot with water jets at a high pressure and do not plunge it partially or thoroughly in water, as it is not watertight.

- It is absolutely forbidden to use the robot in explosive and flammable environments.

- The operator or user is responsible for accidents or hazards occurring to other people or their property.

7. TROUBLE SHOOTING

Problem	Display	Possible reasons	Solutions
Mower stop working and beeping.	16° C ALAM FRONT WHEEL LIFT 12/17 TUE 09:01 16° C ALAM UP THE GROUND 12/17 FRI 09:02	Mower is lifted over 2CM from the ground.	Put the mower in lever ground, turn off the mower and restart it.
Mower stop working and beeping.	16° C ALAM MOTOR CORRENT IS 12/17 TUE 09:01 16° C ALAM TOO LARGE 12/17 TUE 09:01	1. Cutting height too low. 2. Blade or running wheels strike hard objects. 3. The mower is trapped in lawn.	1. Adjust the cutting height to suitable height. 2. Clean the grass and make sure it is free from hard objects. 3. Clear the lawn where the mower is trapped or restart the mower in another place.
Mower stop working and beeping.	16° C ALAM THE SLOPE IS TOO 12/17 TUE 09:01 16° C ALAM STEEP 12/17 TUE 09:01	Mower is tilted over than 30 degree from the ground	Put the mower in lever ground, turn off the mower and restart it by enter password and choose operate pattern.

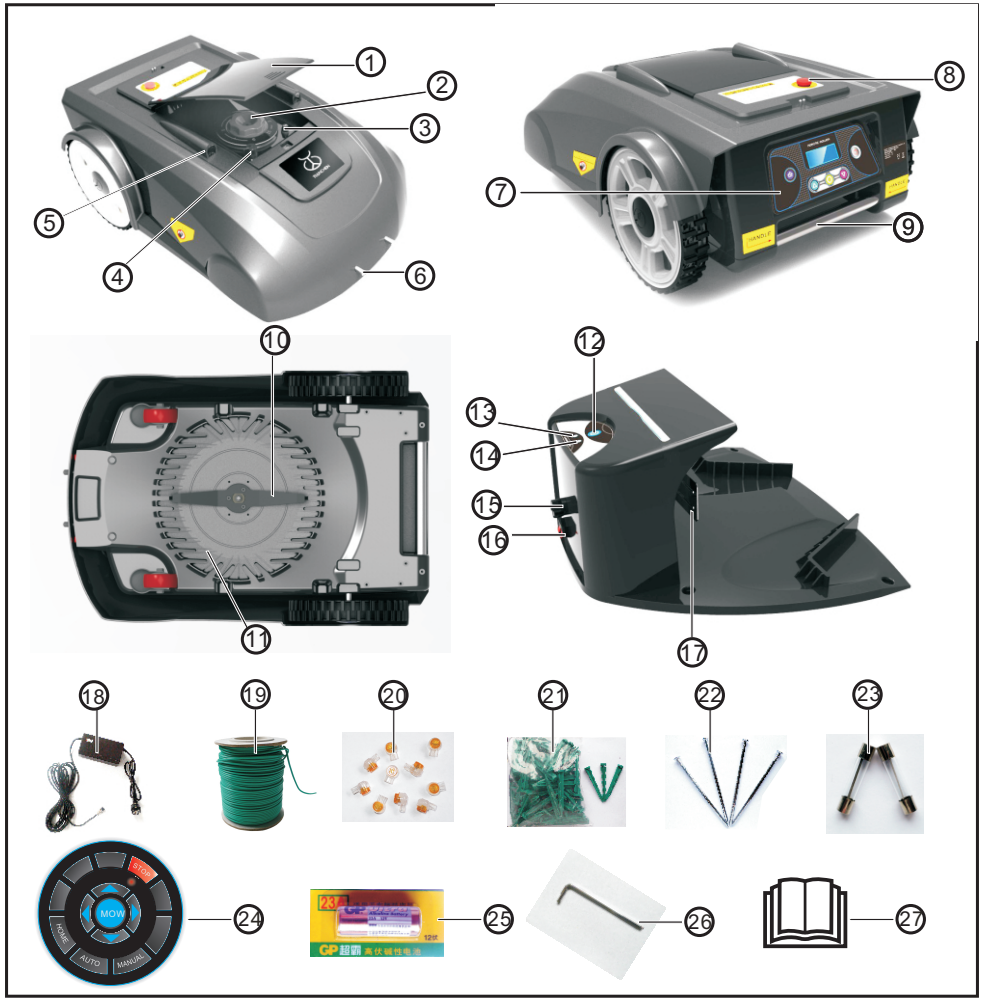
7. Trouble shooting

Problem	Display		Solutions
After enter the correct password and set operate patten, but the mower still can not start. And the charging station is beeping.	16° C ALAM VIRTUAL WIRE HAS 12/17 FRI 09:02 16° C ALAM BEEN CUT OFF 12/17 FRI 09:02	1.The virtual wire fails to send signals. 2.The virtual is broken	1.Check the virtual wire light (colorless). Be sure the virtual wire is connected to the charging station that is motion, and there is no loose place. 2. Connect the wire with virtual wire connectors.
After enter the correct password and set operate patten, but the mower still can not start	16° C ALAM CHARGING STATION 12/17 FRI 09:02 16° C ALAM OUT OF POWER 12/17 FRI 09:02	1. No power to plug receptacle or main power is shut off. Bad communication between charging station and mower	1. Check the power and check the plug. Connect charging station with power supplier.
During operating, Mower stop cutting enter taskstate, and beeping	16° C ALAM HANDLE TOUCHED 12/17 FRI 09:02	Users' hands touch the handle at the back of mower.	Do not touch the handle. Restart the mower .

2. Presentation

This chapter contains information you should be aware of when planning the instalation.

2.1 What's in box



2. PRESENTATION

① Clamshell:
Open it to adjust cutting height.
② Adjusting knob:
Screw it to adjust cutting height.
③ Fuse
④ Charging terminal:
Connect with Charger for recharging directly.
⑤ Ultrasonic sensor
⑥ Charging head
⑦ Control panel
⑧ Emergency switch:
Press it at any time,
the mower turn off at once.
⑨ Handle (Human sensor)
Touch it when it's working,
It stops at once.
⑩ Blade
⑪ Blade sheld
⑫ Home button
Press it when it is operating,
it goes back to charging station automatically.
⑬ Virtual wire light
Colorless: in good connecting
Red: Broken wire/ idle
⑭ Charging light
Red: charging
Green: full charged / idle.
⑮ Power terminal
⑯ Virtual wire terminal
⑰ Copper sheet
⑱ Charger
⑲ Virtual wire (100m):
Used to mark mowing area and create a virtual wall for the mower.
⑳ Virtual wire connectors (10pcs):
Used to connect virtual wire.
㉑ Pegs (100pcs):
Used for fix the virtual wire to the ground around the lawn perimeter and around obstacles.
㉒ Stakes (4pcs):
Used for fix the charging station to the ground.
㉓ Fuse (2pcs)
㉔ Remote control
㉕ Remote control battery
㉖ Inner hexagon spanner
㉗ English user manual

Consumable parts
1. Blade
2. Virtual wire
3. Virtual wire connectors
4. Pegs
5. Fuse

6. MAINTENANCE AND STORAGE

6.5 Battery
The battery is maintenance-free, but has a limited life span of 1-3years.

Battery life is dependent on the length of the using season and how many hours per week the robot is used. A long season or many hours of use per week, means that the battery must be replaced more regularly.

IMPORTANT INFORMATION

Charge the battery fully at the end of the season before winter storage.

- Attentions for lead-acid batteries
Charge the batteries at least once every six months of they are at 25℃ The interval of this charge should be reduced to 50% by each 10℃ rise in temperature above 25℃. The self-discharger state, their capacity may not recover ever after charge. If the batteries are stored for more than a year at room temperature. The life of batteries may be shortened.

Store the batteries starting from fully charged state to prevent the life of the batteries being shortened.

Use the batteries as quickly as possible after receiving them as they gradually deteriorate even under proper storage conditions.

- Attentions of lithium batteries
Please charge the lithium batteries in accordance with standard time and procedures.

When the power is too low. It should be started charging as soon as possible.

Storage, we suggest the optimum storage of lithium battery is with 40% power and keep in the shade.

- Disused battery processing
Please contact the nearest waste treatment certer and consultation with recycling and proper disposal of views.

6.2 Robot Storage

Packed the mower and all spareparts with the original package, and storage the carton off the ground in a cool, dry place. Temperature should not be colder than -4F° (-20℃)

6.3 Blade replacement

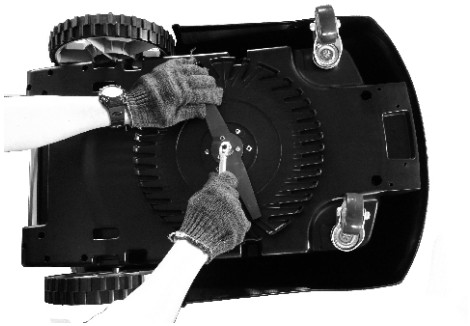
Blade model: 2000B

Blade replace steps:

1.Stop the robot in safety conditions.

2. Wear protective gloves.

3. Turn the Robot upside down.



4. Unscrew the blade and remove it.

5. Replace a new blade and screw it.

6.4 Fuse replacement

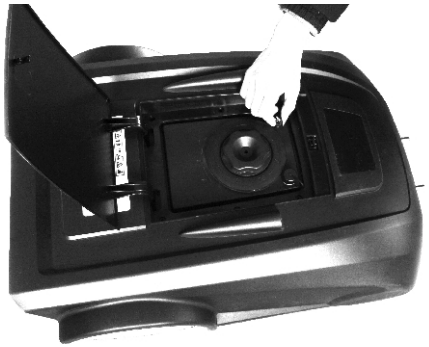
Fuse model: 2000F

Fuse replace steps:

1. Press the clamshell and open it.

2. Unscrew the cap and take out the broken Fuse.

3. Replace a new Fuse and screw the cap.



2.2 Function of 2000series

- Lift sensor

There are lift sensors located on each omni-directional wheel. If the mower was lifted 2cm from the ground in level way, it will stop working within 2 seconds.

- Tilt sensor

There is tilt sensor installed on the mower too, when the mower was tilted over 30 degree at any direction, it also will stop working within 2 seconds.

- Ultrasonic sensors

Compare to traditional bumpers, the ultrasonic obstacles is much more safety. The mower selects a new direction before it bumps people or obstacles automatically. That means no touch! Don't worry, the mower will never hit your children and pets. Ultrasonic sensors can be selected, that means it can be turn on or turn off freely.

- Bump sensors

In front of the mower there equipped with bump sensors that will activate when the mower strikes solid, fixed object when that object is at least 6cm in vertical height from the supporting surface of the mower. When the bump sensor is activated, the mower will stop movement in that direction and reverse itself away from the obstacle.

- Rain sensors

There are two rain sensors on top cover of mower. The mower will go back to the charging station automatically when it's raining. Rain sensors can be selected from control panel or remote control.
Turn on it: the mower will go back to home if it is raining.
Turn off it: the mower will go on mowing when it is raining.

- Human sensor

Touch the handle when the mower is cutting, it will cease function within 2 seconds.

- Wireless controller

To control the operate of mower in manual pattenr.

- **Mowing schedule**
  Set up one week (From Monday to Sunday, once for each day) cutting schedule from control panel. The mower is on auto pattern when in schedule functioned, if it feels is powerless, it will go back to charging station for recharge automatically, and it will goes on cutting after it finishes recharge.

- **Anti-theft function**
  User must enter the correct password then the mower can be started. What's more, the mower can not be turned on without charging station.

- **Cutting width:30cm**

- **Humanistic cutting height selection**
  3cm-6cm humanistic design.
  Easier for user to choose the cutting height. Just screw it!

- **Auto recharge system**
  When the mower is operating it feels powerless, the cutting motor turn off at once and it will find the virtual wire then go alone it back to charging station for recharge automatically. (this allows you to keep the charger connected with the charging station all the time, even after the battery is fully charged.) On auto pattern, the mower will go on mowing after fully recharge. But if it is on manual pattern, it will just stay on charging station after fully recharge.

- **Emergency stop switch**
  There is an emergency stop switch located on the top of mower and red in color. If you press it in any case during operating, the mower must stop all movement and stop the rotating of blades immediately. Rotating the switch to reset it and the mower is in taskstate by entering the correct password and choose operate pattern to restart it.

- **Two cutting modes**
  There are two cutting modes of the mower, go straight and go circle (high efficiency). On manual pattern, we can choose the cutting mode from remote control. On auto pattern, mower selects cutting mode intelligently. It goes straight if the grass has be cut, and it goes circle if the grass is long.

3.Clean all the outside surfaces of the robot with a spong soaked in warm water.
4.Do not use solvents or benzene so not to damage the varnished surfaces and the plastic components.
5.Do not wash the inside parts of the robot and do not use water jets in pressure so not to damage the electric and the electronic components.

WARNING

Never use a high-pressure washer or even running water to clean the robot.

6.Check the lower part of the robot (cutting blade area and wheels) and remove the deposits and/or residues that might obstruct the correct functioning of the robot.
7. To remove the deposits and/or other residues from the blade, use a suitable brush.
8. Clean the outside of the charging station from any accumulated residues.
9. Keep all nuts, bolts and screws tight to be sure the appliance is in safe working condition.
10. Replace worn or damaged parts for safety.
11. Ensure that only replacement cutting means of the right type are used.
12. Ensure that batteries are charged using the correct charger recommended by the manufacturer.
13.Incorrect use may result in electric shock, overheating or leakage of corrosive liquid from the battery.
14. In the event leakage of electrolyte flush with water/neutralising agent, seek medical help if it comes into contact with the eyes etc.
15. Servicing of the appliance should be according to manufacturers instructions. This product (include battery pack) must be disposed of at a designated collection pint for electrical and electronic waste. For more information, contact your local city office or the shop where you purchased the product.

6. Maintenance and storage

- During maintenance operations, use the individual protections indicated by the Manufacturer , especially when intervening on the blade.

- Before performing maintenance operations, make sure that the robot has stopped in safety conditions.

PROGRAMMED MAINTENANCE INTERVALS CHART

Frequency	Component	Type of operation	Reference
Every week	Blade	Clean and check the efficiency of the blade	See “Robot cleaning”
		If the blade is bent due to an impact or if it is worn-out, replace it.	See “Blade replacement”
	Fuse	If the fuse is burned down	See “Fuse replacement”
Every month	Robot	Carry out cleaning	See “Robot cleaning”

6.1 Robot cleaning

1.Stop the robot in safety conditions.

2. Wear protective gloves.

- Virtual wire

The robot lawn mower can't operate without a virtual wire. (we suggest to use 100m-300m of virtual wire). It leads the mower back to charging station and the mower will take it as a wall when it is operating. It will get on the virtual wire until it meets charging sheet which localed in front of charging station, then it gets off virtual wire and starts cutting.

- Mower stops working if virtual wire has be cut or charging station is out of power

If virtual wire has been cut off or it's out of sign, the mower must stop working within 3 seconds. If the charging station is out of power, the mower also will stop working within 3 seconds.

- Three steps to safe start the appliance

Three necessary steps to start the mower: firstly, connect virtual wire to charging station and make sure it is in good connecting (virtual wire light on charging station is colorless). Second, connect charging station with power supply through charger and the charging station light is in green color. Third, turn on the power of mower by entering the correct password and choose operating pattern, the mower started.

- Overload protect

Each of the two blade motors and each of the two wheel driving motors are monitored continuously during operation for any situation that may cause these motors to over-heat. In the event this is detected, the mower will stop operation.

- Fuse protect

There is a fuse hold under clamshell (top cover) next to charging jack, it contains a one-time-use fuse in the event of a short-circuit or power malfunction.

- Waterproof

Waterproof design, there is an inner cover under top cover which protect inside parts from humidify.

- LED display

2.3 Technical date

Model	L2700	L2800	L2900
Mower technical date			
Gross weight	25KGS	22KGS	22KGS
Net weight	22KGS	19KGS	19KGS
Mower size	70*48*27cm(LWH)	70*48*27cm(LWH)	70*48*27cm(LWH)
Power	85W	85W	85W
Noise	≤75db	≤75db	≤75db
Qty for cutting blades	1pc	1pc	1pc
Cutting height	2.5-6cm	2.5-6cm	2.5-6cm
Cutting width	25.4cm	25.4cm	25.4cm
Cutting speed	20m/min	20m/min	20m/min
Blades rotate speed	4000rpm	4000rpm	4000rpm
Hill capability	30degree Maxslope	30degree Maxslope	30degree Max slope
Max ambient functioning temp.	40℃	40℃	40℃
Coverage(for once charging)	800m2+20%	800m2+20%	1200m2+20%
Working capacity	2000m2+20%	2000m2+20%	2600m2+20%
Warranty	1 year	1 year	1 year
PS: How large an area is mown per once recharge depends primarily on the condition of the blade and the type of grass, growth rate and humidity. The shape of garden is also significant. If the garden mainly consists of open lawns, mower can mow more per hour than if the garden consists of several small lawns separated by trees, flower beds and passages.			
Charging station and virtual wire			
Charging station size	45*38.5*23.5cm(LWH)	45*38.5*23.5cm(LWH)	45*38.5*23.5cm(LWH)
Virtual wire maximum length	300m	300m	300m
Standard virtu al wire length	100m	100m	100m

5.13 Recharging

Recharge Voltage:24V (Lead-acid battery) / 29.4V(Lithium battery)
Recharge current: 2A

- The mower could goes back to recharging automatically if it is power less. Or press the Home button on the charging station, the mower also goes back to station for recharge.

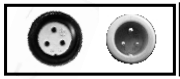
- The mower also can recharges by charger directly.

Steps as follow:

1. Press the clamshell and open it

2. Unscrew the cap of charging terminal.

3. Insert charger and screw the knob.



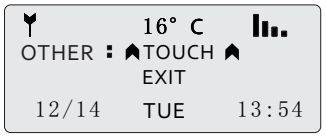
Match the slop then screw it!

4. Connect the charger to power supplier.

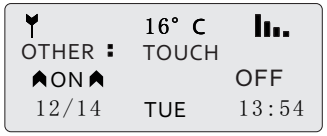
WARNING

The charger is not water-proof therefore it must be located on a place which is dry and ventilated.

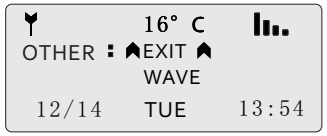
- Select **TOUCH** and press to enter it.



- Press or to select “ON” or “OFF” and press to confirm it.



6. EXIT
Exit **OTHER** setting and it goes back to menu.



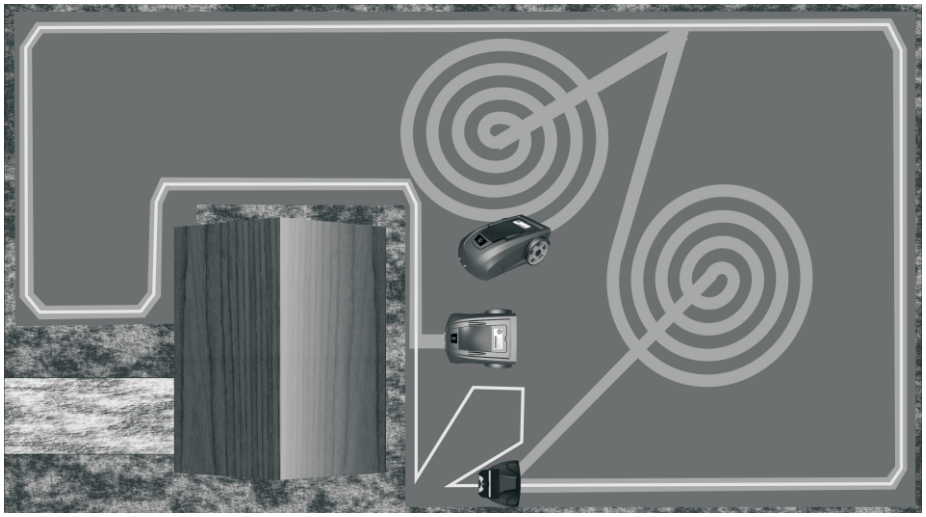
IMPORTANT INFORMATION

Each setting will be functioned after restart the mower.

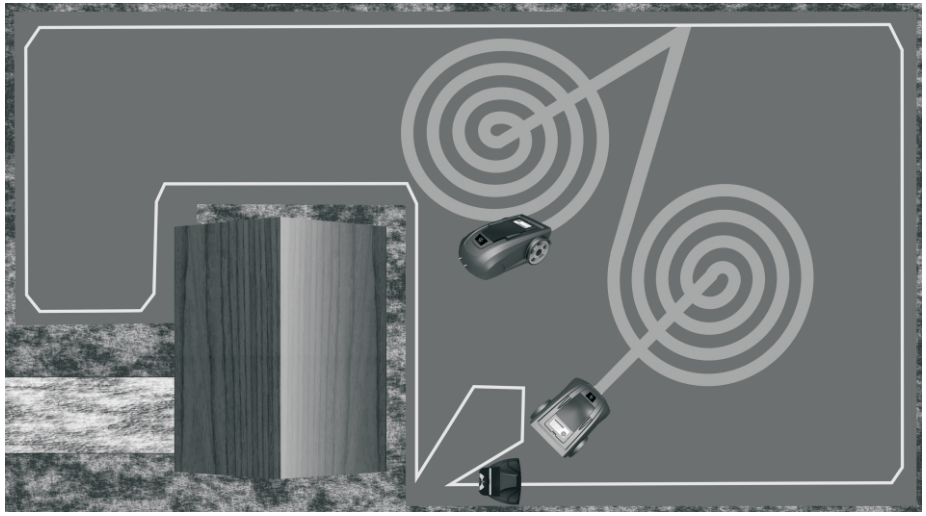
Model	L2700	L2800	L2900
Battery			
Type of battery	Lead-acid battery	Lithium battery	Lithium battery
battery	7.2Ah	7.2Ah	10Ah
Charging time	3-4hours	3-4hours	5-6hours
Average working time	3hours	3hours	4.5hours
Functions:			
Around virtual wire walking option	√	√	√
Mower can’t be started when charging station is powerless	√	√	√
Mower can’t be started when virtual wire has be cut	√	√	√
Intelligent lawn testing	√	√	√
Rain sensor	√	√	√
Auto recharge	√	√	√
Intelligent spiral	√	√	√
Go straight	√	√	√
Anti theft	√	√	√
Lift sensor	√	√	√
Tilt sensor	√	√	√
Ultrasonic wave	√	√	√
Bumper sensor	√	√	√
LED display	√	√	√
Waterproof	√	√	√
Human sensor	√	√	√
Time set-up system	√	√	√
Emergency switch	√	√	√
set up password	√	√	√
Rain sensor option	√	√	√
Around virtual wire option	√	√	√

2.4 Working route
Manual pattern
Mower's running path by user's willingness.

Auto pattern
Cutting route when Line is turned on.

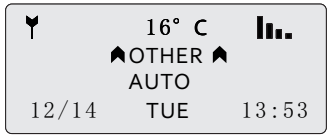


Cutting route when Line is turned off.

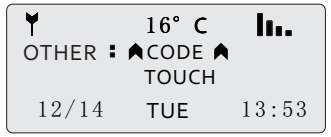


4.CODE
It's about password setting.
CODE: ON, every time the mower starts, user has to enter password.
CODE: OFF, user does not need to enter password each time when it starts.

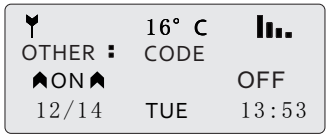
Setting steps:
- Select **OTHER** and press to enter it.



- Select **CODE** and press to enter it.

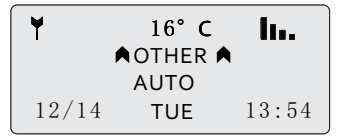


- Press or to select "ON" or "OFF" and press to confirm it.

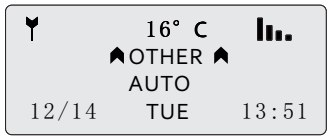


5.TOUCH
It's about human sensor setting.
TOUCH: ON, the mower stops working if something touch the handle.
TOUCH: OFF, the human sensor out of function.

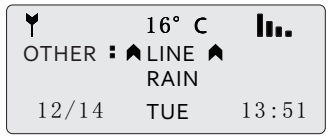
Setting steps:
- Select **OTHER** and press to enter it.



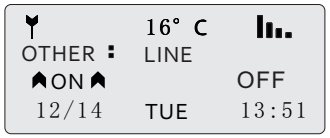
Setting steps:
- Select **OTHER** and press to enter it.



- Select **LINE** and press to enter it.

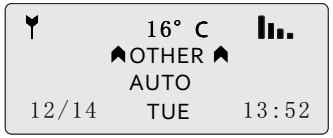


- Press or to select “ON” or “OFF” and press to confirm it.

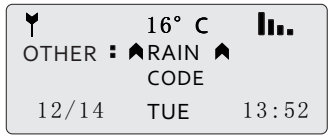


3. RAIN
It’s about rain sensor setting.
RAIN: ON, mower goes back to charging station when it is raining.
RAIN: OFF, mower goes on working when it is raining.

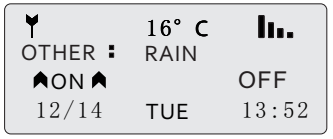
Setting steps:
- Select **OTHER** and press to enter it.



- Select **RAIN** and press to enter it.



- Press or to select “ON” or “OFF” and press to confirm it.



3. Installation
This chapter describes how you install this mower. Before starting the installation read the previous chapter 2. Presentation.

Read the whole of this chapter too before starting the installation. How the installation is made also affects how well the mower will work. It is therefore important to plan the installation carefully.

3.1 Preparations
Training
- Read the instructions carefully. Be familiar with the controls and the proper use of the appliance.

- Never allow people unfamiliar with these instructions or children to use the appliance. Local regulations may restrict the age of the operator.

- The operator or user is responsible for accidents or hazards occurring to other people or their property.

3.2 Hardware adjustments
Blade adjustment
The mowing system used by this mower is based on an effective and energy efficient principle. Unlike normal lawn mowers, the mower cuts the grass instead of striking it off.

Rain sensors on the mower can be selected(see P38), we recommend you allow the mower to mainly mow in dry wether to obtain the best possible result. Even the mower can mow in rain, however, wet grass easily collects on the mower and the risk of slipping on steep slopes is greater.

The blades must be in good condition to obtain the best mowing result. In order to keep the blade sharp for as long as possible it is important to keep the lawn free from branches, small stones and other objects (especially the objects less than 6cm height).

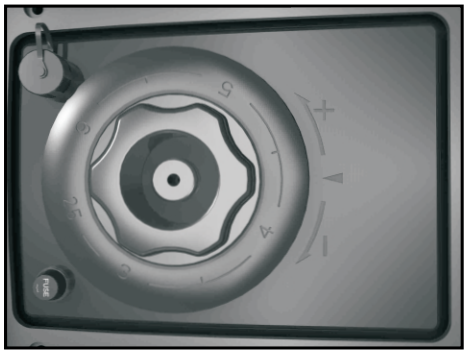
How to adjust the cutting height:

1.Press the clamshell and open it.

2. Screw the adjusting knob to the cutting height you are willing to.

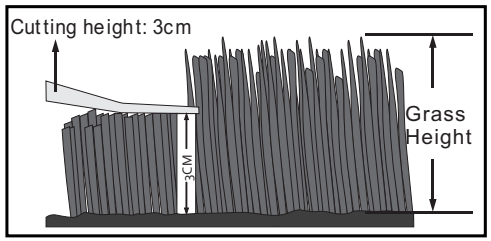
3. Close the clamshell.

Cutting height from 2.5cm to 6cm.



Adjusting knob

Cutting height explanation :
For example the cutting height is in 3cm level.

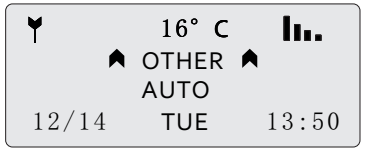


5.12 OTHER setting
Enter **OTHER** menu there are 5 options,
WAVE, LINE, RAIN, CODE, EXIT.

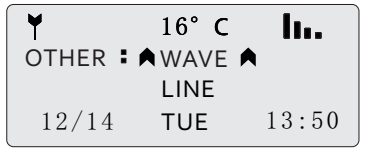
Factory setting of the mower:
WAVE: ON
LINE: ON
RAIN: ON
CODE: ON

1. WAVE
WAVE: ON, ultrasonic sensors functioned.
WAVE: OFF, ultrasonic senors default.
It's about ultrasonic sensor setting,

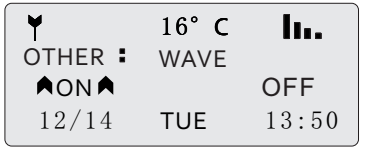
Setting steps:
- Select **OTHER** and press to enter it.



- Select WAVE and press to enter it.

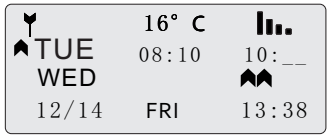


- Press or to select "ON" or "OFF" and press to confirm it.

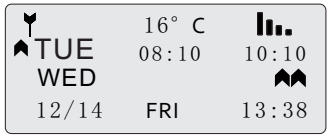


2. LINE
It's about virtual wire setting.
LINE: ON, ever time the mower started, it has to find virtual wire and follow it back to charging station.
LINE: OFF, the mower does not need to follow the virtual wire when it starts.

6. To set End time.
End = End Time
To set Hour and Minute.
(Take 10:10 for example)
- Press ▲ or ▼ to scroll “10” and press ○ to confirm it.



- The arrow moves to Minute. Press ▲ or ▼ to scroll “10” and confirm it.



7. Press ○ and select **Esc** to return back to Menu.

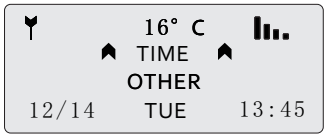
8. The mower goes back for recharge after it finishes cutting.

IMPORTANT INFORMATION

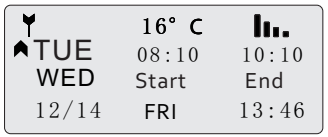
It return back to menu automatically if there isn’t any operate within 10 seconds. The **TIME** can not functioned when the mower is charging.

5.11 Delete working schedule

1. Select **TIME** from menu and press ○ to enter it.



2. Select **TUE** by press ▲ or ▼ and enter it by press ○ .
(Take TUE for example)

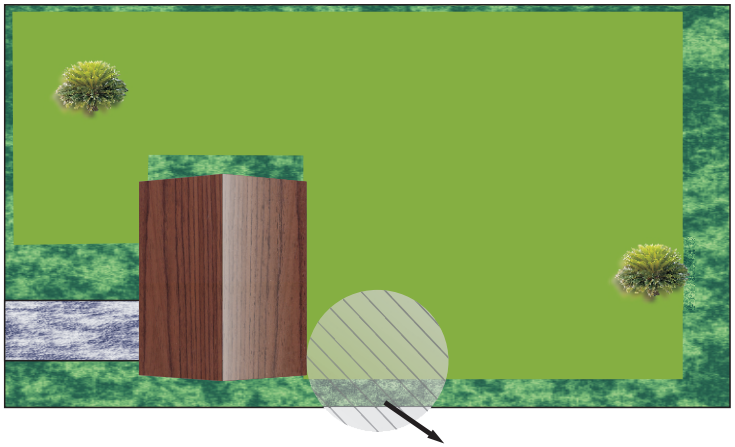


3. Select Del and press ○ to confirm it.

4. Select Esc to exit working schedule deleting.

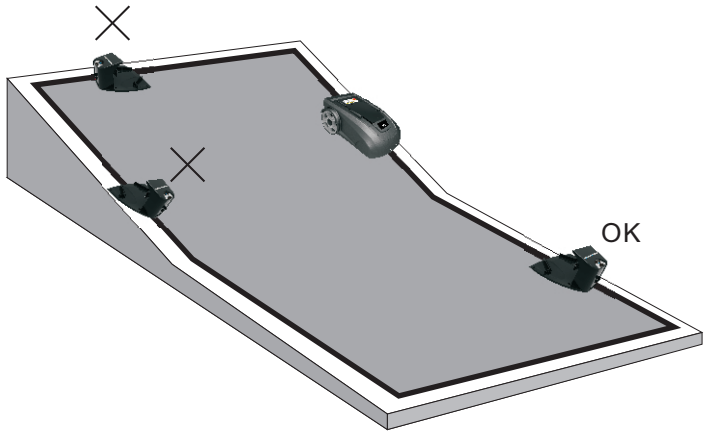
3.3 Charging station installation

- Choose best installation place, please make sure which is flat, no water, no magnetic interference and no obstacle in the front of charging station.

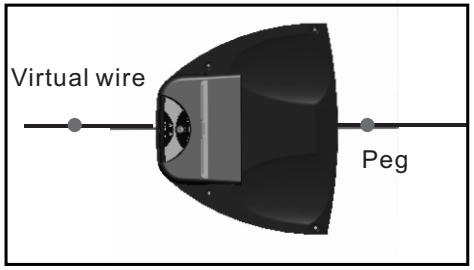


Charging station best install place:
1. Make sure it
2. No magnetic interference
3. No water
4. No obstacle in front

- Please fix the charging station in level place.



- Lay virtual wire in the middle of charging station.



- Fix the charging station with four stakes.

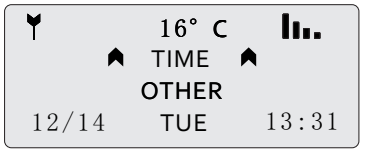
IMPORTANT INFORMATION

Before fix the charging station on the lawn, please examine the lawn and decide the best location which is easy for the mower to find the station for recharge.

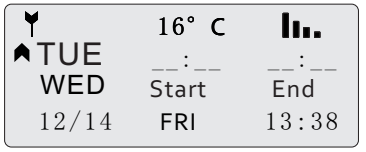
5.10 Working schedule setting

There are 7 options, MON, TUE, WED, THU, FIR, SAT, SUN.

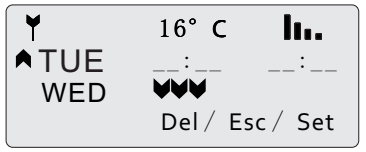
1. Select **TIME** from menu and press to enter working schedule setting.



2. Select TUE by press or and enter it by press .
(Take TUE for example)

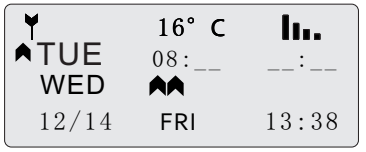


3. Display means.
Del: To delete working schedule which has already set.
Esc: To Esc from working schedule setting.
Set: To set or working schedule setting.

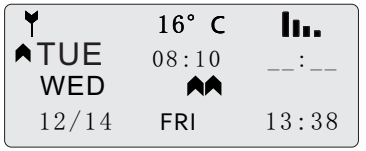


4. Select **Set** and press to enter working schedule setting.

5. To set Start time.
Start = Start Time
To set Hour and Minute.
(Take 8:10 for example)
- Press or to scroll “08” and press to confirm it.



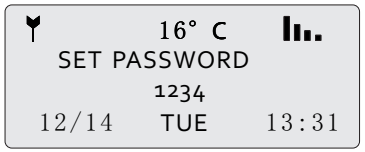
- The arrow moves to Minute. Press or to scroll “10” and confirm it.



- Press the key to confirm it, the arrow moves on to the next position.

- Repeat the procedure to set all the numbers of new password.

- Press to confirm it and press it again to return back to menu.

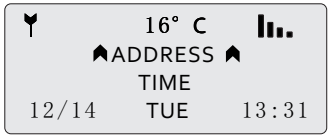


5.9 Address setting

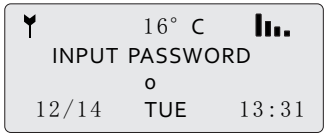
the mower cold communicate with charging station, there is an ADDRESS between mower and charging station. User has to set the address before using the mower.

Otherwise the mower can not start working in Auto model. A label with Address Code paste on charging station.

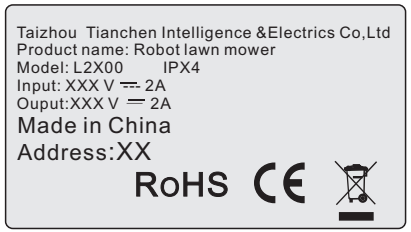
1. Select **ADDRESS** from menu and press to enter it.



2. Enter password.



3. Press Address Code as the label shows.



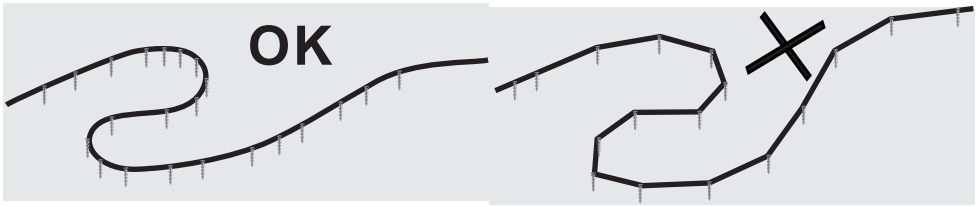
3.4 Virtual wire installation

The virtual wire can be installed in one of the following ways:

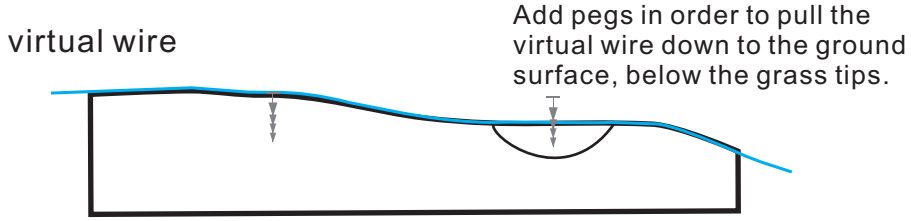
- **Securing the wire to the ground with staples.**
  It is preferable to staple down the virtual wire, if you want to make adjustments to the virtual wire during the first few weeks of operation.
- **Bury the wire**
  It is preferable to bury the virtual wire if you want to dethatch or aerate the lawn.

  If necessary both methods can be combined so one part of the virtual wire is stapled down and the remainder is buried.

- Dig virtual wire with pegs 1 meter per piece in straight-line. Dig corner as picture.



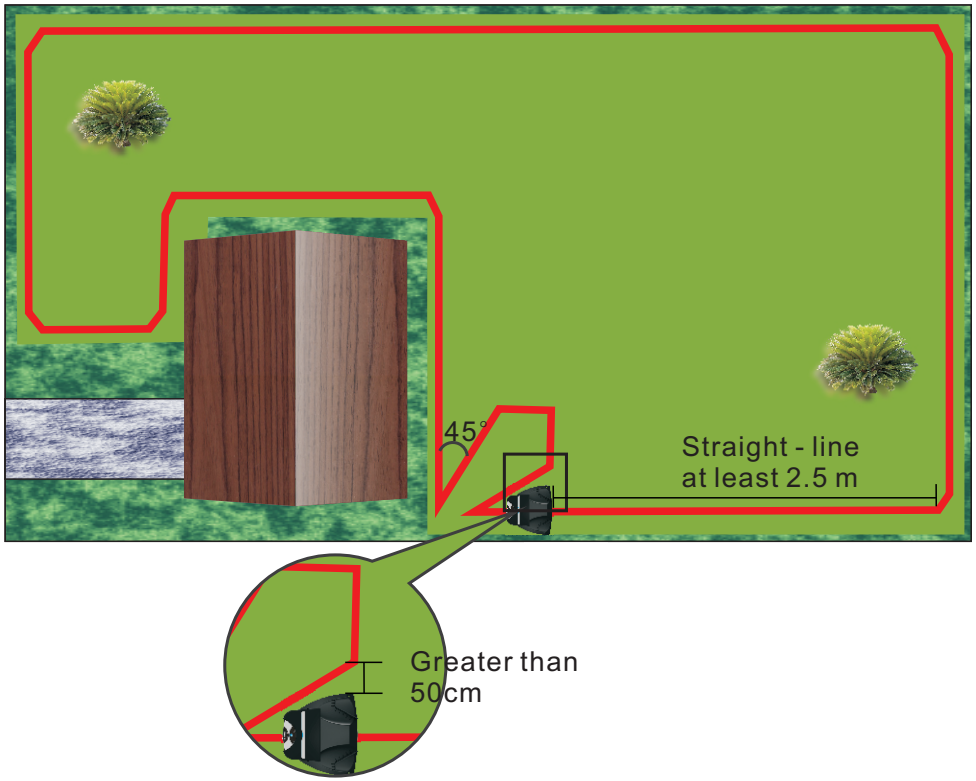
- Bury virtual wire below grass and fasten it on the ground with pegs, so that the mower should not cut the wire. If the grass grow up, we can still keep the virtual wire as before.



IMPORTANT INFORMATION

Hard or dry ground may cause pegs to break when driving them in.
In extreme cases, watering the lawn where the pegs will be driven.

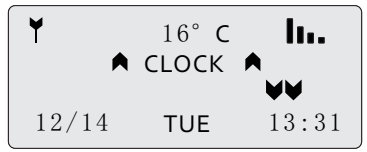
- A minimum distances of front charging station and obstacle is 2 meters. And make sure the distance from corner to front of charging station is at least 2.5 meters. Make sure to lay a 2.5 meters minimum straight-light of virtual wire in front of charging station.



IMPORTANT INFORMATION

The charging station is not water-proof,
It's best to make a Rain Shed above the charging station.

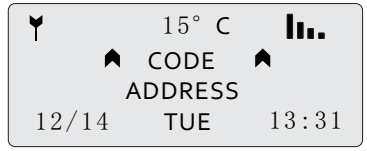
4. To set Hour and Minute.
   - Press ▲ or ▼ to scroll the correct Hour and press ◎ to confirm it.
   - The arrow moves to Minute. Press ▲ or ▼ to scroll the correct Minute and press ◎ to confirm it.



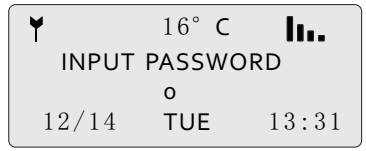
5. Return back to menu automatically.

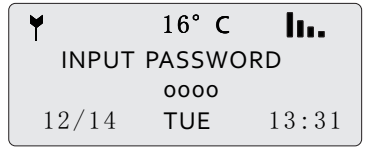
5.8 Password setting

1. Select **CODE** from menu and enter it.

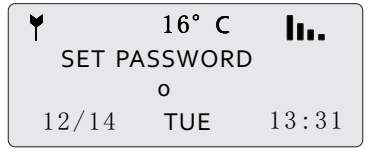


2. Enter **Initial password: 0000**
   - the following message appears on the display.
   - Press one of the keys ▲ or ▼ to set the first figure.
   - Press the key ◎ to confirm it. the arrow moves on to the next position.
   - Repeat the procedure to set all the numbers of Initial password.

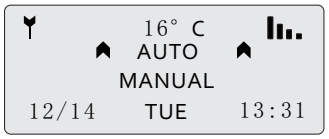




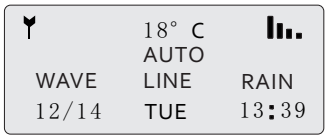
3. Enter new password
   - The following messages appears on the display.
   - Press one of the keys ▲ or ▼ to set the first new figure.



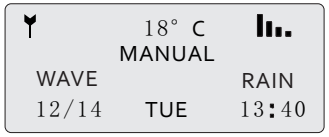
5.6 Operation pattern
There are two operation patterns:
Auto pattern, Manual pattern.



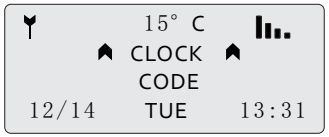
- On Auto pattern, WAVE, LINE, RAIN shows as picture.



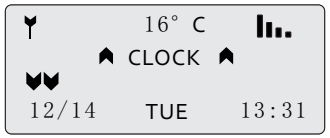
- Manual pattern, WAVE, LINE, RAIN shows as picture.

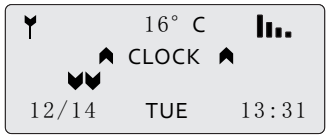


5.7 System time setting
1. Select **CLOCK** and press button to enter system time setting.

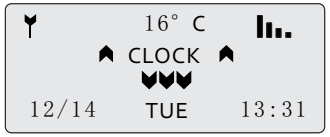


2. To set Month and Date.
   - Press or to scroll the correct **Month**, press to confirm it
   - The arrow moves on **Date**, press or to scroll the correct Date , press to confirm it.

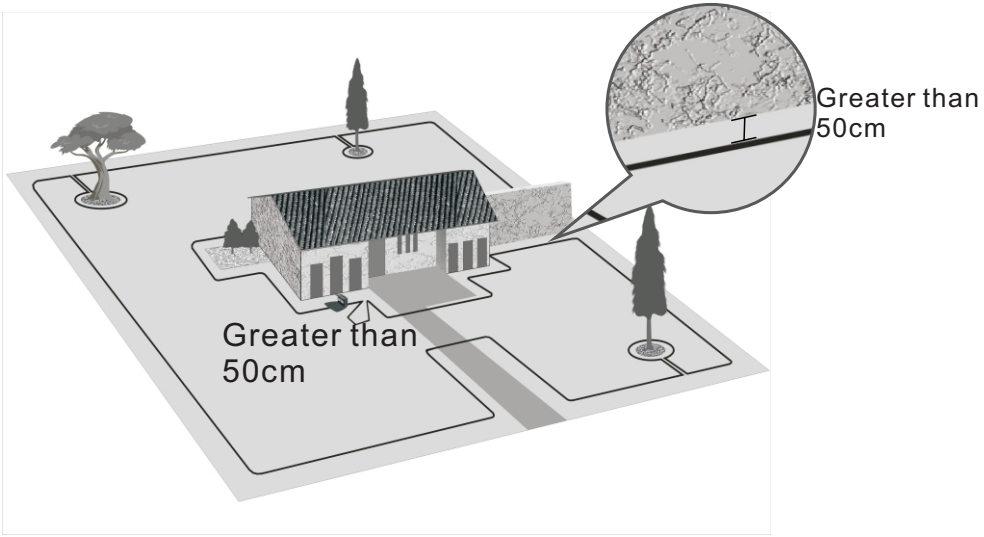




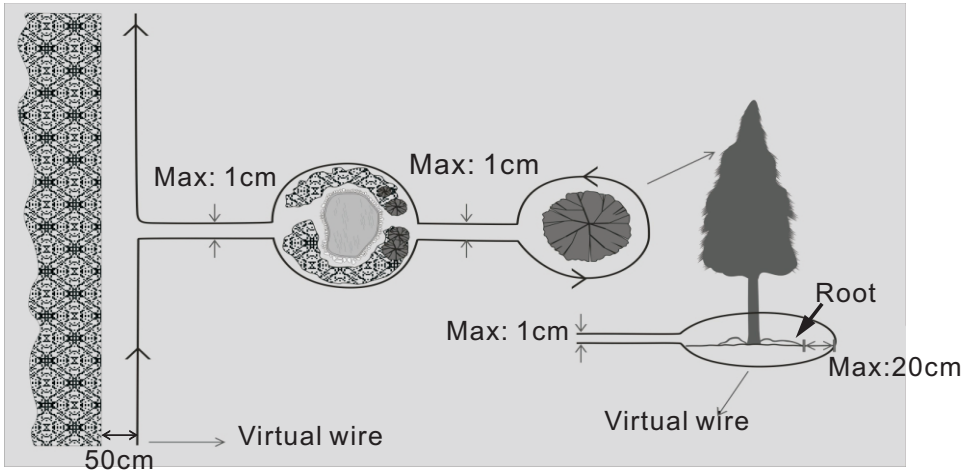
3. To set week (MON, TUE, WED, THUR, FIR, SAT, SUN) by or and confirm it.



- If a high obstacle, for example a wall or fence, borders the working area, the virtual wire should be laid at least 50cm from the obstacle. This will prevent mower from colliding with the obstacle and reduce body wear.



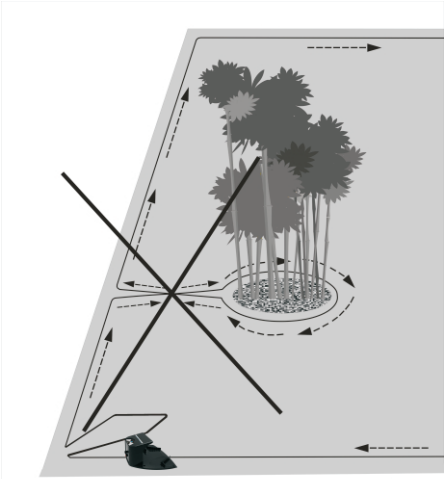
- Use the virtual to demarcate areas inside the working area by creating islands around obstacles that can not withstand a collision, for example, flower beds and fountains. Run the cable out to the area, route it around the area to be demarcated and then back along the same route. If staples are used, the wire should be laid under the same staple on the return route. When the virtual wire to and from the island are close together, the mower can drive over the wire.



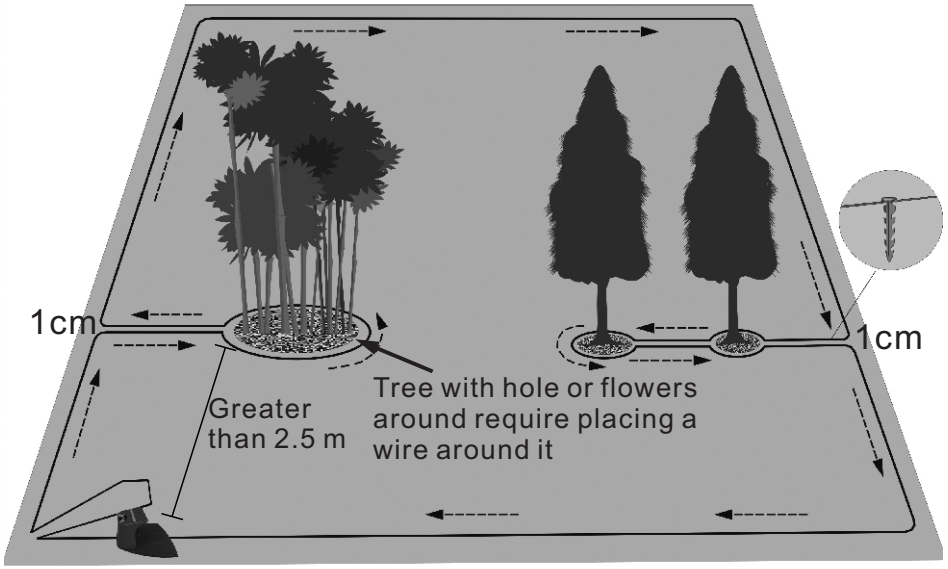
3. INSTALLATION

- The wires leading to the island and returning from it should be parallel and touding. But do not cross them!

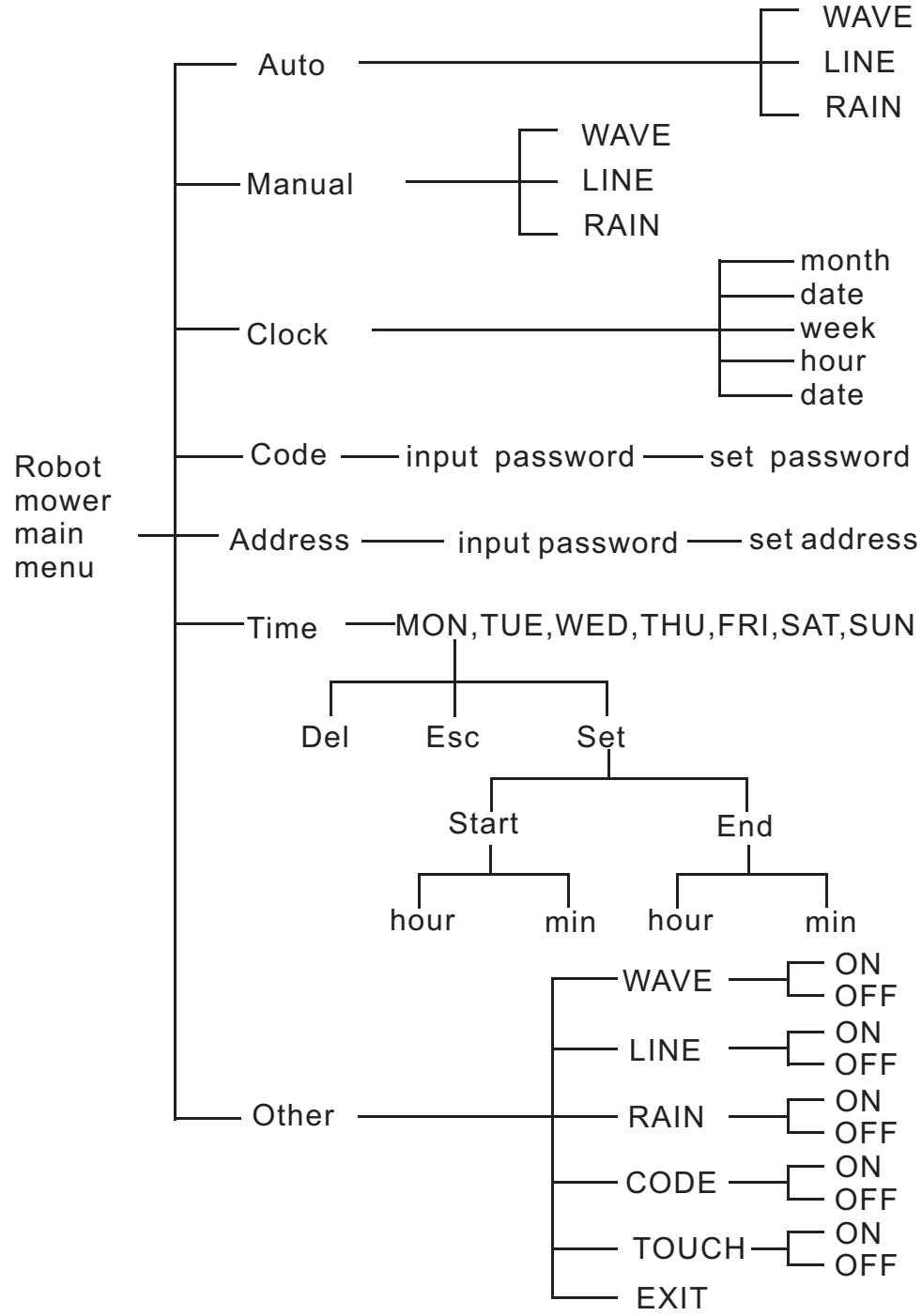
  If protected obstacles are grouped closely together demarcate them by a single. Continuous virtual island if obstacles are dose to edge, leave them out of the mowing area.



- The distance between charging station and virtual loop should at least 2.5 meters.



5. USE



4. Set **ADDRESS** firstly, otherwise the mower can not be turn on.
See **5.9 ADDRESS Setting.**

5. Select operate pattern (Manual pattern or Auto pattern) from control panel or remote control, and confirm it. mower start cutting.

5.3 Stopping mower /Turn off mower

1. Press power button from remote control. Mower stops, the blade motor stops. mower goes into taskstate.

2. The appliance also can be turned off by press emergency witch directly.

3. Press power button from control panel to turn off the appliance.

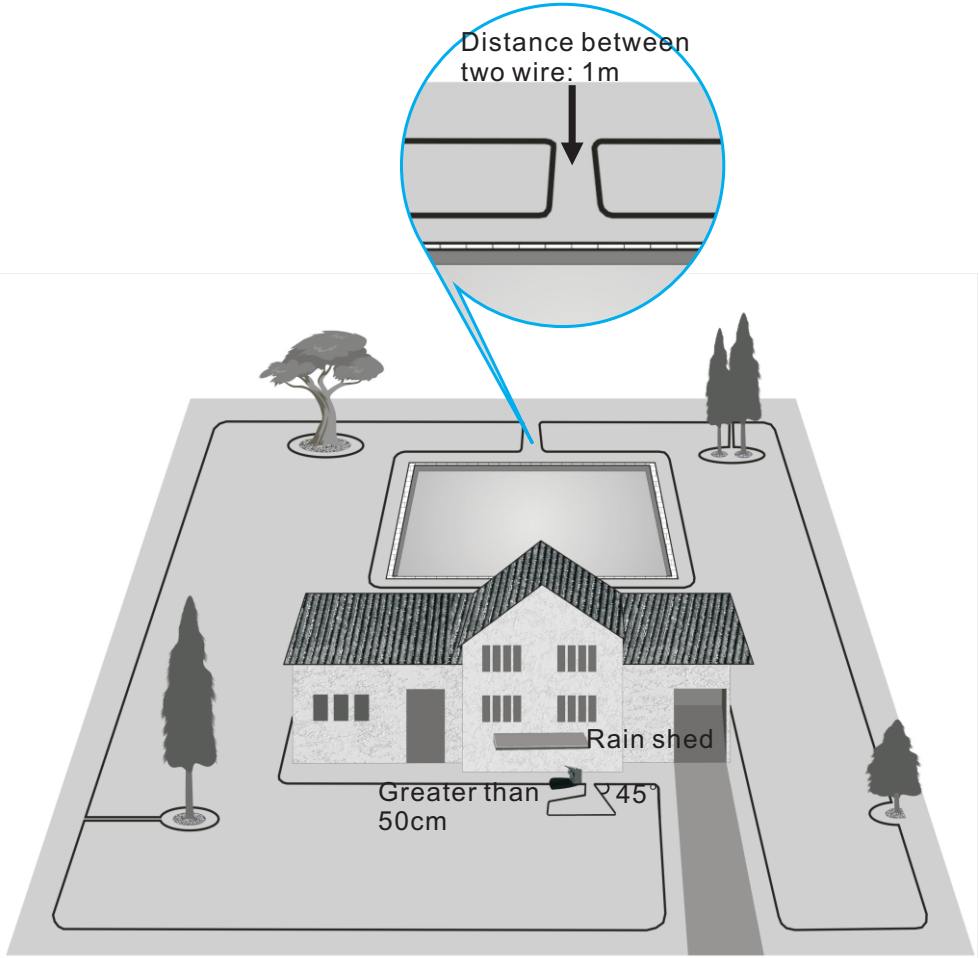
5.4 Restart mower

1. Press power button
2. Enter password.
3. Select operate pattern and confirm it.

5.5 Emergency Switch

Press emergency switch at any time the mower power off at once. User has to restart the appliance.

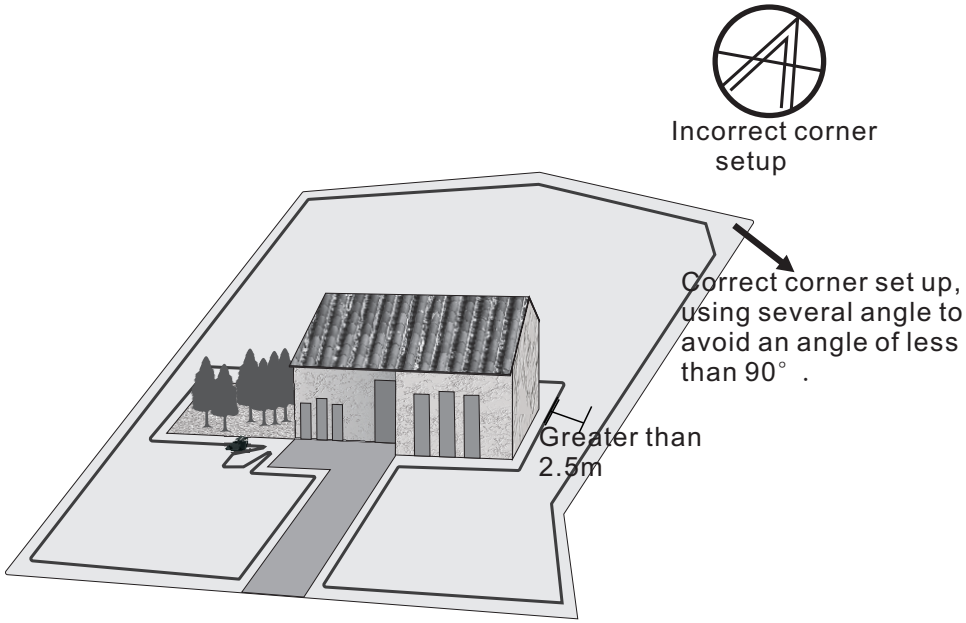
- How to set virtual wire on the ground which has swimming pool.



IMPORTANT INFORMATION

The charging station and charger is not water proof. It's best to set a Rain Shed above the charging station.

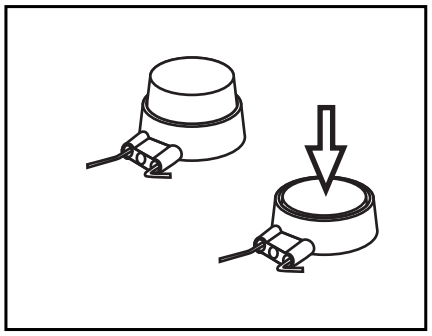
- Care must be taken not to create a corner sharper shorter than 90 degrees when setting up virtual wire. A corner sharper less than 90 degrees can cause the mower to lose track of virtual wire. We can make greater than 90 degrees corner like follow picture shows.



Proper setup in sharp corners

- Joining the boundary wire .
  If the boundary wire is not long enough and needs to be spliced: Use original solderless couper. It is waterproof and gives a reliable electrical connection.

  To splice: Insert both cable ends in the coupler. Now press down the button on top of the connector fully. Use a pair of pliers or the like, as the button on the connector is difficult to press down by hand.



blades and bolts in sets to preserve balance.

- On multi-spindle appliances, take care as rotating one blade can cause other blades to rotate.

- Connect two terminals of virtual wire to charging station, and ensure virtual wire is in good connecting. (Light on charging station is in colorless).

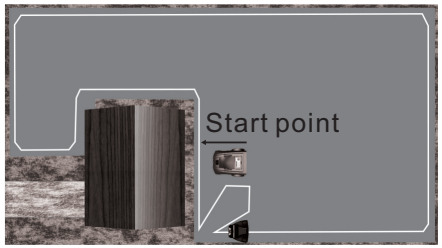
- Insert charger to charging station and screw it. And then connect charger to power supplier. Ensure charging station is in good connecting, light on charging station is in Green.

IMPORTANT INFORMATION

User can't start the mower if virtual wire and charging station has problem.

5.2 Starting the mower

1.In case LINE is on. Take the mower to start point.



2. Press power button from control panel.

3. Clockwise rotate Emergency switch, the mower start. Display shows as picture.

4. Input password (Initial password:0000) the mower enters taskstate.

5. Use

IMPORTANT INFORMATION

Operation with Auto Pattern

- Do not leave the machine to operate unattended if you know that there are pets, children or people in the vicinity

Operation with Manual Pattern

- Mow only in daylight or in good artificial light.
- Avoid operating the appliance in wet grass.
- Do not operate the appliance when barefoot or wearing open sandals.
- Always wear substantial footwear and long trousers.
- Always be sure of your footing on slopes.
- Use extreme caution when reversing the appliance towards you.
- Always switch on the mower according to instructions with feet well away from the blade.

WARNING

Read the safety instructions before you start your mower.

WARNING

Keep your hands and feet away from the rotating blade. Never put your hands or feet close to or under the body when the motors are running.

5.1 Preparation

- Ensure the correct installation of the virtual wire delineation system as instructed

- Periodically inspect the area where the appliance is to be used and remove all stones, sticks, wires, bones, and other foreign objects especial the objects' height is less than 6cm.

- Periodically visually inspect to see that the blades, blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged.

3.5 Virtual wire and charging station connecting

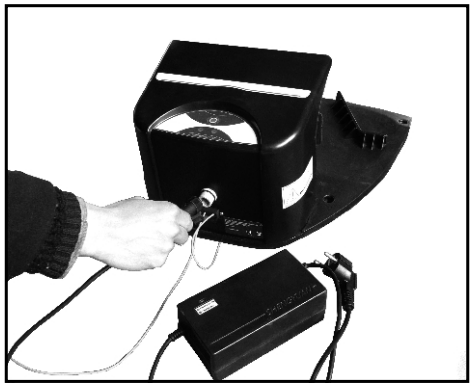
- Connect two ends of virtual wire to patch jack (virtual wire terminal located on charging station) randomly, there is no positive and negative.

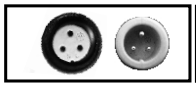
WARNING

Redundant virtual wire back charging station must be cut

3.6 Power connection

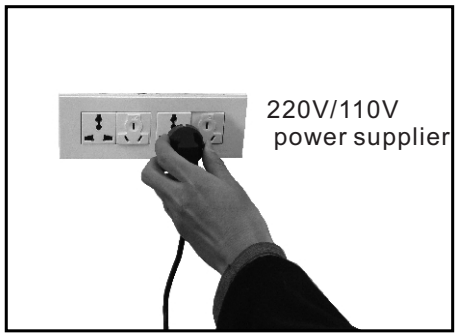
1. Insert charger to the station.





Match the slop then screw it!

2. Connect charger with power supplier.

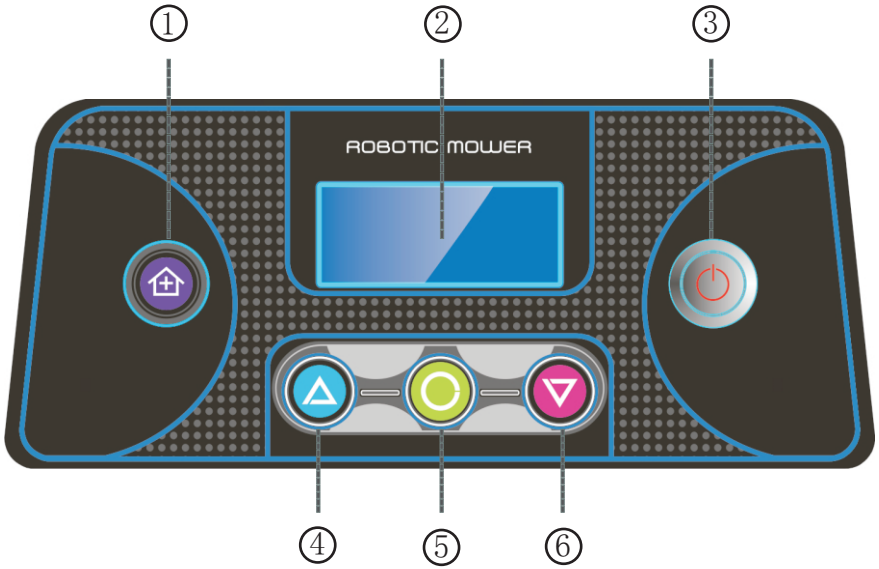


WARNING

The charger is not water-proof therefore it must be located on a place which is dry and ventilated.

4. Control panel and Remote control

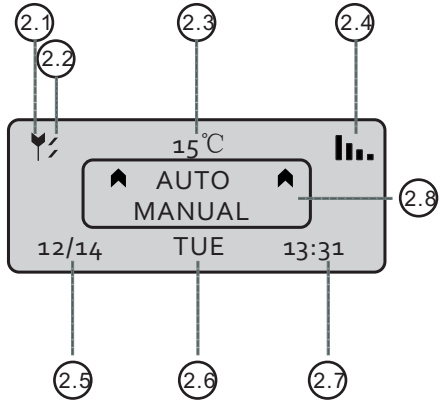
4.1 Control Panel view



① Home button
Press this button when the mower is operating, it goes home for recharge automatically.

② Display

2.1 Charging station sign
2.2 Virtual wire sign
2.3 Temperature inside the mower
2.4 Battery voltage
2.5 Month / Date
2.6 Week
2.7 Hour
2.8 Menu



③ Power switch: Power on/ Power off

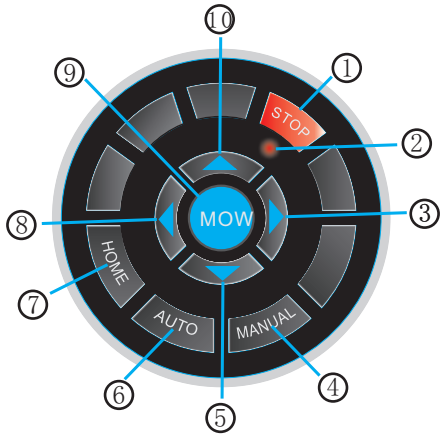
④ Up / + : there are tree functions for this button.
-select menu, go upward
-select menu, go left
-Select figure, means +

⑤ Confirm button
-To confirm your choose or enter.

⑥ Down / -
-select menu, go down
-select menu, go right
- Select figure, means -

4.2 Remote control

① To stop the mower. Press it, the mower enters taskstate.
② Indicator light.
③ Go right.
④ Effected while mower in taskstate. User has to stop the mower first, then press it, the mower enters MANUAL pattern.
⑤ Speed down
⑥ Effected while mower in taskstate. User has to stop the mower first, then press it, the mower enters AUTO pattern.
⑦ Press it during mower is working, it goes back to charging station.
⑧ Go left.
⑨ Turn ON/OFF blade.
⑩ Speed up.



IMPORTANT INFORMATION
③⑤⑧⑨⑩
These five buttons only effected in MANUAL pattern.